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SURGICAL ANÆSTHESIA *

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(Concluded from page 28)

ETHER is an anæsthetic in which we are most interested because, on account of its safety, it is used to the exclusion of others. The requirements of a good apparatus for administering ether are safety, which may be assured through impossibility of interfering with a free supply of fresh air, possibility of continuous administration, cleanliness, simplicity, and lack of expense. The open cone answers these requirements. It is made from several sheets of newspaper folded together so as to be about six inches across. This is folded to form a cylinder six inches in length, which, when flattened out, has a long diameter of six or seven inches. (Fig. 1.) The cylinder is covered by a towel which is held in place by two safety-pins. (Fig. 2.) A wad of absorbent cotton or gauze is lightly packed in one end and secured by a third safety-pin. The other end is to be fitted to the patient's face. Both ends are open and the patient can breathe freely through the cylinder.

After these preparations, the first care of the etherizer is to see that his patient is comfortable, reassured, and as quiet as possible. Pour a small quantity of ether on the cotton in the cone. Spend several minutes in gradually approaching the cone to the patient's face. (Fig. 3.) If he coughs or chokes, remove the cone to a greater distance. Time is saved by allowing the patient to gradually become accustomed to the ether vapor. When the cone is close to the face, fit it tightly and administer the ether rapidly through the distal end of the cone until anæsthesia is complete. (Fig. 4.)

The signs of complete ether anæsthesia are unconsciousness, muscular relaxation, commonly tested by lifting the arm and allowing it to drop, loss of the lid reflex, which is ordinarily present when an attempt is made to lift the eyelid, tendency for the pupil to dilate, deep respiration with a tendency to stertor or snoring, with a frequency of about forty to the minute. The time required to obtain complete anæsthesia should be about eight minutes.

After the anæsthesia is complete only a small amount of ether is required. This should be poured into the cone frequently and in small quantities. During the operation keep the head to one side and well back, with the face away from the operator. (Fig. 4.) Keep careful watch of the following four points:

* A lecture to the Rhode Island Hospital Nurses

1. *The color.* Two variations from the normal color may be met with—cyanosis and pallor. Cyanosis is due to, first, mechanical interference with respiration, most commonly caused by the tongue falling back against the posterior wall of the pharynx, or, second, to an overdose of the anæsthetic. The tongue may be brought forward by pulling the lower jaw forward by fingers well back of the angles (Fig. 4), by the tongue forceps, or a suture passed through the tip of the organ. The overdose of anæsthetic, of course, calls for immediate removal of the cone from the face. Pallor may be due to cardiac failure, shock, or hemorrhage, calling for the cardiac stimulants, saline solution subcutaneously and heat externally, or it may be due to impending vomiting.

2. *The respiration.* The respiration should be deep, without marked stertor, and about forty to the minute. For respiratory difficulty, measures may be taken in the following order: pull the tongue forward by traction on the lower jaw, remove the anæsthetic, friction to the lips with a rough towel, artificial respiration, atropine, one-hundredth of a grain, subcutaneously.

3. *The pulse.* For a failing pulse, remove the anæsthetic, give strychnine, one-thirtieth of a grain; digitalin, one-hundredth of a grain; nitroglycerine, one-hundredth of a grain; brandy, normal saline solution subcutaneously. Amyl nitrite may be applied to the nostrils as a last resort.

4. *The lid and pupillary reflex.* The lid reflex is tested by lifting the eyelid with a forefinger. A patient sufficiently anæsthetized has no movement of the eye or lid. The practice of testing the conjunctival reflex by touching the conjunctiva is to be condemned. The pupil should be moderately dilated but should contract when exposed to light.

Too-deep anæsthesia may be detected by dilated pupils which do not react to light, marked stertorous respiration, shallow respiration, failure of respiration, cyanosis, dark-hued blood, and a failing pulse.

The signs of insufficient anæsthesia are return of the lid reflex, contracted pupils, sighing or moaning, cough or interrupted respiration when ether is added, attempt to vomit, muscular rigidity or movement.

If the patient attempts to vomit, crowd the anæsthetic. If vomiting seems inevitable, remove the cone, turn the head and, if possible, the shoulders to one side. There is danger that vomited matter may be inspired and cause a dangerous or fatal respiratory obstruction.

It is the duty of the anæsthetist to see that the body temperature is maintained throughout the operation. The vaso-motor system is so acted on by ether that the surface capillaries are distended with blood and

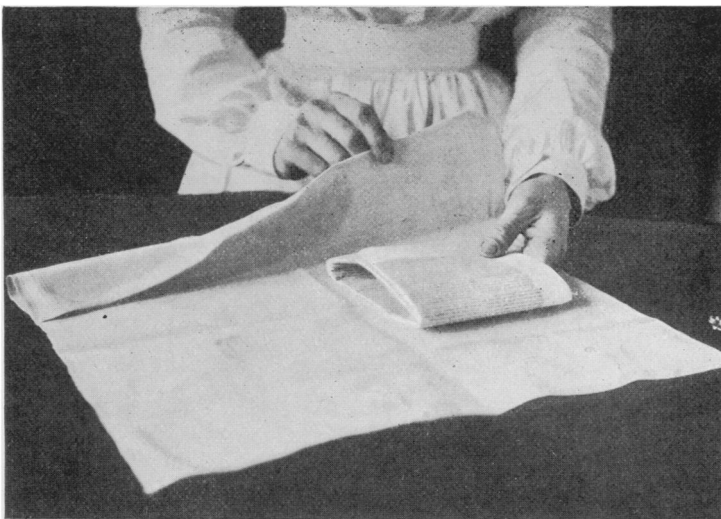


FIG. 1.—THE OPEN CONE

The flattened cylinder made from a newspaper about to be wrapped in a towel



FIG. 2.—THE OPEN CONE

The short end of the towel has been pushed inside the cone. The long end is being pushed through to be folded over the outside



FIG. 3.—THE FIRST STAGE OF ETHER ADMINISTRATION



FIG. 4.—THE SECOND STAGE OF ETHER ADMINISTRATION

The cone fitted close to the face. Ether added to the distal end of cone to make administration continuous. The jaw held forward (if necessary) by finger back of the angle

the patient is in an ideal condition to suffer from exposure to cold or draught. Ether pneumonia is often so caused.

The method of administration of chloroform greatly resembles that of ether. An Esmarch's mask is covered with six or eight layers of gauze. The chloroform is contained in a drop bottle. The patient's face is protected with vaseline. Pour a few drops of chloroform on the mask and approach it gradually to the patient's face. Pour on chloroform drop by drop until anæsthesia is complete, and then more slowly throughout the operation. Have ready ether and a cone, and in case of difficulty change to this anæsthetic, which we have seen to be much safer. An operation commenced before anæsthesia is complete may cause death from shock. The greatest danger from chloroform is from an overdose suddenly administered to a patient who has been allowed to come too far out from the influence of the anæsthetic.

When the operation has been finished, the anæsthetic discontinued, and the dressing applied, the patient is removed to his bed, care being taken that he is well covered and that there is no unnecessary jolting to increase the liability to vomiting. Recovery from the anæsthetic should immediately begin. First the respiration becomes quieter, the lid reflex returns, the pupils grow smaller, although they may dilate if the patient is disturbed or if vomiting is imminent. The eyeballs move from their fixed positions. The breathing becomes intermittently obstructed from efforts to swallow. Coughing, retching, or vomiting may occur. If the patient should remain with evidences of deep anæsthesia for some time after the administration is finished, we may be sure that an unnecessarily large dose of the anæsthetic has been given.

A patient recovering from an anæsthetic should never be left alone. The duties of the nurse seeing him out of ether are, first, to see that the bed has been well warmed by hot-water bottles before the patient is transferred to it. Blankets and hot-water bottles should then be applied. Hot-water bottles should be wrapped in blankets that the skin of the still unconscious patient may not be injured. Second, to keep the patient well covered and protected from cold and draughts. In the particularly susceptible condition of an anæsthetized patient pneumonia is readily and frequently contracted from such exposure. Third, the head should be kept low. Fourth, to carefully note the condition and to report any untoward change. During recovery the stimulating effect of the ether has been removed and there is liability to cardiac failure. Pallor and feebleness of pulse may be due to this or may attend the nausea and vomiting. Fifth, if vomiting should occur, the head and, if practicable, the shoulder should be turned to one side. Temporary obstruction of the respiration is common at this stage. It may be necessary to push the jaw forward

or to clear the mouth. No attempt at nourishment should be made for the first four hours.

The secret of the successful administration of an anæsthetic consists in, first, some knowledge of the physiological action of the drugs employed, and, second, in the recognition and careful observance of the signs to which I have endeavored to call your attention. Upon the anæsthetist rests the responsibility of life and death, unless, having noted the signs of approaching danger, he has called attention to them and shifted the responsibility to the broad shoulders of the operating surgeon.

MY IMPRESSIONS AS A POST-GRADUATE

By MARY ALLENSON

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JUST at this time when nurses all over the country are interested in post-graduate work perhaps my impressions as a post-graduate may be of interest

Trained in a small hospital in Western Canada, and having been graduated two years, I was anxious to enlarge my experience and find out in what ways our work and methods were different from those in large hospitals.

There being no post-graduate school in Canada, and wishing to take a general course in nursing, I entered a large post-graduate school in the United States about March 1. Even before going on duty all my fond expectations were rudely dispelled as I heard a conversation among a number of nurses telling of the long hours, laborious work, and the little benefit they were receiving. One woman in particular spoke disparagingly of the faculty and staff, informing us that the graduates were treated meanly, being given the heaviest and most disagreeable branches of the nursing, ending her remarks by saying, "If I were only starting, I'd leave, but as I am nearly through I'll stay and brave it out."

As I listened I concluded that the post-graduate course was simply a scheme to get cheap nursing. On going to my room I regretted having left my position and felt like packing my trunk and returning. However, upon thinking the matter over I concluded that what others could do I could aim at, and my common-sense prevailed. I decided to try it for myself. But I know that such conversations and remarks by a few dissatisfied ones have discouraged a great many at the start who did not wait to discover the right or wrong of it for themselves.